DOCUMENT RESUME

ED 360 740 EA 025 193

AUTHOR Simkins, Tim
TITLE The Consequences of School-Based Management in England and Wales: A Review of Some Evidence from an Economic Perspective.
PUB DATE Apr 93
NOTE 33p.; Paper presented at the Annual Meeting of the American Educational Research Association (Atlanta, GA, April 12-16, 1993).
PUB TYPE Information Analyses (070) -- Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Educational Economics; Educational Equity (Finance); Educational Finance; *Efficiency; Elementary Secondary Education; Foreign Countries; *School Based Management; *School Effectiveness
IDENTIFIERS *England; *Wales

ABSTRACT

School-based management has been a key element of education reform in the United Kingdom. Under Local Management of Schools (LMS), individual schools are given broad power over management of school budgets and most aspects of personnel and buildings. Two factors influence the transition to greater local control of schools. First, parental choice and other changes are increasing market pressures on the school system. Second, the market is being tightly controlled through implementation of a National Curriculum and assessment. A review of literature on efficiency and effectiveness of resource management and LMS leads to a hypothesis that, at a macro level, formula funding tends to favor larger schools. This calls into question assumptions upon which school funding is based. At the school level, LMS seems to encourage efficiency in resource management. However, it is unclear how this may be affecting learning outcomes. There is little evidence that LMS improves school effectiveness. Schools' response to LMS seems to hinge on how they have fared under it and the management style of school leaders. This research suggests that, while concepts of efficiency and effectiveness are useful measures for examining LMS, more rigorous and consistent use of the concepts is needed. (Contains 44 references.) (JPT)

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ED 360 740

American Educational Research Association
1993 Annual Meeting
Atlanta, 12-16 April

The consequences of school-based management in England and Wales: a review of some evidence from an economic perspective

Tim Simkins
Sheffield Hallam University, UK

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4 April 1993

Sheffield Hallam University
Centre for Education Management and Administration
36 Collegiate Crescent
Sheffield S10 2BP
United Kingdom

Telephone: 0742 531319
Fax: 0742 532323

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The consequences of school-based management in England and Wales: a review of some evidence from an economic perspective

Tim Simkins, Sheffield Hallam University, UK

School-based management - called Local Management of Schools (LMS) in the United Kingdom - is one of the key elements of the Conservative Government's reforms of the past five years. It represents one strand in a strategy designed to pursue the 'five great themes' of 'quality, diversity, increasing parental choice, greater autonomy for schools and greater accountability' (DFE, 1992a, p 2). Under LMS schools are being given very wide powers over the management of resources: school budgets, and most aspects of personnel and premises management are, or shortly will be, managed at the level of the individual school.

The powers granted to schools under LMS are delegated to governing bodies containing representatives of parents, teachers and the local education authority (LEA) as well as co-opted members; headteachers are responsible to these governing bodies. LMS, therefore, in Brown's (1990) terms comprises both organisational and political decentralisation of power. According to the Government:

> Effective schemes of local management will enable governing bodies and head teachers to plan their use of resources – including their most valuable resource, their staff – to maximum effect in accordance with their own needs and priorities, and to make schools more responsive to their clients – parents, pupils, the local community and employers. (DES, 1988, para 9)

The reference to responsiveness alludes to the fact that the powers of LMS must be exercised within an environment which is itself undergoing a very significant transformation. There are two key elements here. First, schools are being made much more explicitly subject to market pressures, through a significant increase in parental choice of school and requirements that certain kinds of information about schools be published including performance of pupils in tests and examinations. Secondly, however, this market is being firmly controlled through the implementation of a National Curriculum and a tightly defined regime of testing associated with it. Taken together, therefore, the Government's reforms match quite closely the general theory behind many school-based management initiatives in United States as outlined by Wohlstetter and Odden (1992, p 530):

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> [P]roductivity and effectiveness can be enhanced if clear outcome goals are set at the top of the system, ... implementation is decentralized to the school site where services are delivered, and accountability is structured either with rewards for for accomplishing goals and sanctions or not or through parental choice of school.

This paper focusses primarily on LMS, but it will be impossible to consider its effects in any depth without keeping in mind this broader context of increased parental choice and centralised curriculum control.

The radical nature of restructuring which LMS involves raises a whole range of research questions. It is possible to explore its consequences from accounting, economic, political, sociological and educational perspectives (Simkins, 1990). The focus taken here will be primarily an economic one: it will explore in particular how ideas about efficiency and effectiveness underpin, implicitly or explicitly, the reform and how far research about the consequences of LMS can be related to these ideas. The paper will draw on a selected number of research studies which address the resourcing and resource management consequences of LMS. In interpreting these studies it is important constantly to bear in mind that the reform is still in its early stages of implementation so any findings about its consequences can be no more than extremely tentative. What is clear, however, that, compared with the situation little more than five years ago (Simkins, 1987), the ways in which we view the economics of schools need to be radically changed.

Efficiency and Effectiveness

It is now a commonplace in the United Kingdom, following the work of the Audit Commission (1985), to refer to the 'three E's': economy, efficiency and effectiveness. Economy is defined as the purchase of a given standard of good or service at the lowest cost, efficiency as the achievement of given outcomes at least cost, and effectiveness as the matching of results with objectives. This distinction does not prevent confusion, however, especially when discussing educational programmes.

In order to clarify the discussion, we will define economy as the Audit Commission does but distinguish between a number of concepts of efficiency. *Production* efficiency concerns the relation between resource inputs and outputs: it comprises *technical* efficiency - combining resources in ways which maximise output per unit of input - and *price* efficiency choosing that combination of resources which makes best use of a budget given relative prices. Particular educational objectives might be achieved in a number of ways, all of which are

technically efficient but only one of these is likely to be price efficient for any particular pattern of prices. LMS is clearly and explicitly intended to cause schools to become more efficient in these terms. Block budgets, with almost complete virement within them, give managers the opportunity to choose resource combinations which seem to them most likely to provide the best value for money. The range of choices available is wide and will be considered in more detail below.

Considerations of efficiency are insufficient, however. Questions about *how* to produce, have little meaning unless they are related to ideas about *what* to produce. The issue here concerns *effectiveness*: the matching of outputs to an appropriate objective function. The key problem for managers under LMS is that this can be viewed in a number of ways. The Government statement reproduced above implies two perspectives: '[governing bodies and head teachers'] own needs and priorities' and the demands of 'their clients - parents, pupils, the local community and employers.' To this must be added, of course, both the over-riding expectation that schools will teach and test the National Curriculum and also professionals' own perceptions of what is in the best interests of their pupils in relation to their educational and other needs. The implications of these competing conceptions of effectiveness have been little discussed in the empirical literature on LMS although they are clearly central to any attempt evaluate the impact of the innovation.

We will return to these issues later. It is sufficient to note here the two key questions posed about LMS by the efficiency and effectiveness perspectives. First, what assumptions about production efficiency guide choices about the allocation of resources to and within schools? And second, how do schools choose to deploy resources towards objectives which must balance the demands of the National Curriculum, of parents and other 'clients', and of their own staff's values and concerns?

Formula Funding

School budgets under LMS must be determined on the basis of a formula which is dominated by pupil numbers - the 'age-weighted pupil unit' (AWPU). Over the next two or three years these budgets will increasingly include an element for LEA central services which schools may buy from the LEA, from other providers or not at all as they choose. The operation of formula funding has been a major focus of research in the early stages of LMS. The importance given in the legislation to funding schools by formula gives both the Government

time for teaching-related activities and for management, and provision for special educational needs. This generates an increased funding requirement for both primary and secondary sectors, but with a proportionately greater increase for primary schools. Other LEAs are now undertaking similar studies and reaching similar conclusions (eg Sheffield, 1992). The basis of such conclusions, of course, derives from professional judgement rather than any empirically-established relationship between resource inputs and learning or other outcomes. It embodies, therefore, a particular conceptualisation of how efficiency and effectiveness should be defined – in terms of 'need' – and of the kinds of evidence which which are acceptable to demonstrate the resource requirements necessary to achieve them. I shall return to this point later. The debate about need-based funding, especially in relation to the primary sector, will undoubtedly grow; but any resolution seems a long way off in a climate of tight public expenditure control.

Internal Resource Allocation

Compared with the 'macro' consequences of the implementation of formula funding, fewer studies of the responses of schools in terms of their internal patterns of resource allocation have been reported so far. This issue, among others, is addressed by a national study of the effects of LMS as perceived by headteachers which is being undertaken by a team from Birmingham University (Arnott, *et al*, 1992). An initial survey of 812 headteachers in the second half of 1991 produced a number of interesting, if tentative, findings. Questions addressed include the following:

- *headteacher workload:* an average of 8 hours per week associated with LMS, with two-thirds of heads feeling 'unacceptable pressures' as a result
- *staff contracts:* indications of an increasing use of temporary staff
- *secretarial and clerical staff:* a tendency for schools to increase modestly the number of hours worked
- *the effect of salary level on appointments:* 18% of heads reported that salary had been a factor in the appointment of candidates
- *discretionary authority over salary level:* 16% reported they had used this.

These findings must be treated with caution: they date from 1991, they are based on limited longitudinal data, they represent self-reporting by headteachers and they are not related to schools' circumstances such as their size or whether

they are winners or losers under formula funding. Some of these qualifications can be overcome by the use of detailed case studies; these, however, are relatively expensive and can take time to lead to conclusions. One such study, by Marren and Levacic (1992; Levacic and Marren, 1992), examines the first year of LMS in 11 schools in one LEA. Despite the short time-scale covered a number of the findings are indicative. Schools are classified by sector (secondary, middle, primary) and by whether they are 'winners' or 'losers'. The main findings confirm the expectation that the approaches taken by school will depend upon their position on the 'winner-loser' spectrum.

> ... some schools were clearly constrained by their formula allocation in their ability to plan their resource use in relation to identified priorities. Those schools not so constrained were either content to continue as before or ... to use LMS actively to pursue the implementation of a number of stated objectives, [in one case] working closely with the school development plan. Other schools [mainly losers] had to be more selective and focussed on particular priorities such as enhancing core curriculum areas ... or of increasing the pay of secretarial support staff. This has meant that other priorities have had to be shelved, such as agreed incentive allowance structure or curricular provision. ...
>
> Those on the edge of viability ... were not even able to do this but had to use every means at their disposal to survive as they were. This involved ... detailed examination of how every part of the budget was spent to ensure that limited resources were used most efficiently. This meant that schools were economising in ways they would not have had to previously. This included considering the cost of new staff. ... Those schools ... which did worst under formula funding have been forced to examine their existing structures to find savings. They were in the process of forming clear ideas about the future development of their schools and may well be ultimately in a position to function more effectively than those schools which were content to rely on or just slightly enhance existing structures. (Marren and Levacic, 1992, pp 146-147)

These findings have been quoted at length because they raise important issues. They suggest that losers are more likely to concentrate on 'efficiency' strategies than are winners, but the latter do not necessarily use the opportunity provided by an increase of resources to pursue explicit 'effectiveness' strategies designed to enhance the achievement of their key objectives. Much seems to depend on the headteacher's management style and the degree to which development planning is seen as a central element in school management: 'energy and capability [in managing resources] did not depend on whether a school was a winner or a loser' (Levacic and Marren, 1992, p 22).

and LEAs the opportunity to express key values and policies through the details of formula design. The majority of studies in this area have involved the examination of available documentation or large-scale surveys to explore how these values and policies are carried through in practice. The Government's values have been embodied in the requirement that a high proportion of funds (initially 75%, now 80%) are allocated on the basis of pupil numbers and ages. LEAs, however, have the opportunity to exercise discretion - and hence pursue values - through the age weightings they use, the ways in which they define and protect small schools, and the ways in which pupils with special needs and/or those suffering from socio-economic disadvantage are supported (Thomas and Levacic, 1991; Thomas and Bullock, 1992). There is no space to review in any detail here studies of the ways in which formulae have been designed. A number of main findings need to be highlighted, however:

- LEAs vary considerably in the relative weightings which they give to pupils of various ages, but they follow a common pattern with older children more favourably resourced than younger ones (except for those in the very early years) with a noticeable step at around age 11 between primary and secondary school and smaller steps at age 13/14 and at the end of compulsory schooling (age 15/16). Absolute levels of funding per pupil at each age differ considerably between LEAs. (Bullock and Thomas, 1992; Levacic, 1992a)
- The scale of gains and losses among schools as formula budgeting is implemented varies considerably among LEAs. However, there is a tendency, which is not uniform across authorities, for larger schools to gain, in both primary and secondary sectors, at the expense of smaller schools. Secondary schools with fewer than 700 pupils have the greatest chance of being losers. (Levacic, 1992; Thomas and Bullock, 1992)
- LEAs protect small schools in a variety of ways: by lump sums given to all schools, by sliding scales of additional resources related to school size and/ or salary protection, or by a combination of these. Where lump sums are used the definition of smallness varies widely with sample LEAs ranging from 150 to 250 pupils in the primary sector and from 470 to 832 pupils in the secondary sector. (Thomas and Bullock, 1992)
- Pupils with special educational needs and those suffering from socio-economic disadvantage are supported through a variety of mechanisms which vary in the criteria used and do not distinguish consistently between these two kinds of need. (Lee, 1992; Thomas and Bullock, 1992)

The idea of an 'objective' formula can be interpreted in two ways. On the one hand, it might simply imply that the formula is specified so that its outcome can be predicted once the values of the independent variables are known. Alternatively, and more demandingly, it might mean that there is a clearly defined rationale for its components. Evidence suggests that the early days of formula funding have been dominated by the former interpretation. First, the constraints imposed by the Government in its search for simple formulae have precluded the design of formulae based on any complex assessment of need. Secondly, and probably more important, LEAs in designing their formulae have generally attempted to reflect earlier patterns of resource allocation. In part, no doubt, this has been because such patterns were deemed to reflect long established – albeit qualitative – assessment of relative need. More important, though, has been the determination to minimise the difficulties of transition in a situation where, for most LEAs, few if any additional resources were available. Thus the reaffirmation of earlier patterns of choice has been reinforced by the pressures to minimise the number of 'losers' and, therefore, the number of 'winners'.

Comments made by Bullock and Thomas (1992) about differences in age-weightings can be extended without too much difficulty to differences in funding more generally:

> The public and explicit nature of these resource rules provides a means for asking questions about the educational implications of resource distribution and the rationale for these first formulae. All too often it is likely that LEAs have sought to replicate current funding priorities rather than alter them ... Yet the introduction of the National Curriculum suggests a case for examining the distribution of resources. Regardless of local or historic explanations, can the lower levels of funding at the junior level be justified given the demands of the National Curriculum? Questions may also emerge about the variations between LEAs in funding pupils of comparable ages: on what basis are such differences to be justified? (Bullock and Thomas 1992, p 12)

Such arguments bring to the fore questions of effectiveness and efficiency in a powerful way. What kind of educational provision is the formula expected to fund; what is the minimum per pupil cost of making such provision; and how do such costs vary with school size?

Formula funding enables the answers to questions such as these, which are implicit in LEA resource allocation policies, to be tested: rarely are they made explicit. Some studies, however, have begun to explore them from first principles. For example, Kelly (1992) develops a model on the basis of assumptions about curriculum provision, maximum group sizes, required contact

Currently the evidence of the impact of LMS on decision-making patterns within schools is quite limited beyond the general finding about centralisation. However, given that any thorough analysis of effectiveness and efficiency must link resource considerations with curriculum delivery and the quality of learning, and teaching and learning depend primarily on classroom teachers and middle managers, research on LMS will have to probe more deeply before long.

The search for efficiency and effectiveness: the emerging agenda

So far I have attempted to map some of the research findings concerning the very early stages of a major innovation. These findings are inevitably tentative, but they do raise issues about the implications of LMS for the pursuit of efficiency and effectiveness. What can we say in general about these questions?

The Birmingham survey (Arnott, *et al*, 1992) asked headteachers about their views in this area. 83% agreed that LMS 'allows the school to make more effective use of its resources', while only 68% agreed that LMS ' means resources are being used more efficiently'. The difference is an interesting one; the problem, however, is that effectiveness and efficiency are not defined. Indeed, the research on LMS is often not precise in its use of these terms. For example, Bowe and Ball (1992, pp 112-13) write about 'budgetary responsibilities (being) set over and against educational ones' as 'decisions about the best and most appropriate form of delivery for the National Curriculum were subordinated to budget setting and vocabularies of institutional survival'. On the other hand, Broadbent *et al* (1992) found that in all four of their case study schools, winners and losers alike, 'educational values of the school remain intact. Nowhere has been heard the argument that any of the school's activities should be stopped or reduced because of the economic or financial reasons only' (p 65). It is not clear here how far such conclusions represent contradictory evidence, which may or may not be explained by the differing circumstances of the schools studied, how far they arise from different conceptualisations of effectiveness, or indeed how far the data gathering processes are such as to elicit different responses from respondents. The rest of this paper will explore the efficiency and effectiveness consequences of LMS in more detail.

Efficiency

I will begin by considering the issue of efficiency as this is more consistently explored in the studies being examined and lends itself to less ambiguous conclusions. It can be addressed at two levels: the macro and the micro.

At the macro level issues arise about the distribution of resources between schools, especially in relation to school size. As we have seen, virtually all LEAs have built an element into their formulae to 'protect' smaller schools. There is no doubt that small schools have higher unit costs than large ones. For example the Audit Commission (1991) estimated that primary schools with less than 80 pupils on roll cost between £2,000-£3,800 per pupil against £1,000 for schools with more than 120 pupils. The limitations imposed on funding formulae by the Government together with the political consequences of making this cost information more openly available at a time of severely constrained budgets are likely to lead to considerable rationalisation over the next few years, at least in urban areas and hence to the achievement of greater efficiency in unit cost terms at least. For example, Levacic (1992b, p 6) found in a study of one LEA that

> the formula is efficiency promoting in the sense that schools with low unit costs (which are related to size, pupil-teacher ratios and occupancy rates) systematically benefit.

Further studies are likely to repeat this finding. However, it begs a number of questions about optimal school size which will be addressed shortly.

At the micro level of the individual school, an issue which has received less attention than formula construction has been the dynamic effects of formula funding. The requirement that formulae should be 'objective' means that the consequences of changes in independent variables, such as the number and age distribution of pupils, the relative weighting given to pupils of different ages or the number of pupils with special needs, on the dependent variable of the school budget can be predicted largely unambiguously. This raises two important management questions. First, it enables us to explore the consequences of such changes for provision within the school. What is the impact for example, of a given change in roll or of a changed proportion of pupils with special needs on the school's budget? What choices do schools make about resource allocation at the margin in relation to such variables, and what does this tell us about their values in relation to ideas of effectiveness and efficiency? And how far are school strategies influenced by their perceived consequences for future funding? Clearly the intention of the legislation is to encourage schools to attempt to attract more pupils; but what about other elements in the formula? Do for example particular approaches to the funding of special needs have demonstrable effects on schools' provision and strategies in this area?

This issue of school size is particularly interesting in this context. As indicated earlier, there is certainly evidence from case studies that small schools

Nevertheless resourcing opportunities, and therefore choices, clearly do depend on resourcing levels. Examples of choices made by 'winning' schools in the study by Marren and Levacic include increases in staffing and in non-contact time, increasing the salaries of head and deputy, maximising incentive allowances, increasing secretarial support and salaries, additional funding on on-service training and increasing the resourcing of key curriculum areas. Losers in contrast had to consider restructuring, not replacing staff when they left and targetting additional resources extremely carefully to areas of critical need. The degree to which they could achieve the latter often depended on the 'luck' associated with such factors as staff retirements. Furthermore the, admittedly limited, evidence in the paper suggests that as the scale of budget loss increases (and as schools get smaller) efficiency strategies designed to pursue key priorities with fewer resources are increasingly replaced by 'economy' strategies whose main concern is to save money whatever the long-term costs. In this respect, whether losing schools are 'ultimately in a position to function more effectively' is likely to depend very much on the kinds of strategies which they are able to pursue. All schools, however, were concerned to implement certain efficiency strategies such as containing premises costs and ensuring a small surplus at the end of the year.

School Decision-making

LMS has placed major new responsibilities on schools and has changed significantly the formal roles of headteachers and governing bodies. How are these changes being implemented in practice? A number of studies have explored this issue, mainly using a case study approach (Bowe and Ball, 1992; Broadbent *et al* 1992a and b; Levacic and Marren, 1992; Sheffield, 1992). One of the clearest findings from these studies is that resource and financial management are generally undertaken by one or two senior members of staff sometimes, but not always, working with one or two active governors. The senior staff involved are normally the headteacher in primary schools and the head and/or a deputy in secondary schools, with an increasing tendency in the latter case to employ a bursar or finance officer. The potential paradox here is stated clearly by a study in Sheffield:

> In Sheffield, as elsewhere in the country, the growing practice of school development planning places great stress on a collaborative process of curriculum and resource planning led by governors and, through them, the head, and involving all the staff... The case studies [of eight Sheffield schools]

suggest that, for whatever reasons, we are still a long way from achieving this collaborative model ...

This prompts two questions. Is this a satisfactory state of affairs? If not, what ought to be done about it? (Sheffield, 1992, p 6)

The reasons usually given for this centralisation of resource management include both the level of knowledge about whole-school resource issues residing 'at the top' and the perceived need, in the words of one head, to 'act as a buffer, a filter to protect the rest of the staff from the huge amount of issues, many of which are not important and would only upset them if they had to contend with them' (Broadbent *et al*, 1992a, p 59). Despite the rather patronising assumptions embodied in this quote, the evidence from the case studies does seem to imply that teaching staff generally do not wish to be closely involved in decisions generated by LMS. For example, on the basis of interviews in their 11 schools Levacic and Marren (1992b) commented on 'the far higher rate of indifference to LMS [among classroom teachers] which a number of teachers attributed to the time demands upon them, particularly by the National Curriculum' (p 6). Their findings, however, place an interesting gloss on these issues. Their interviews showed that the differences in orientation between senior staff and classroom teachers seemed to hold whether the schools concerned were winners or losers: at all schools - including losers - senior staff were in favour of LMS while at almost all schools class teachers were indifferent, wary or hostile. The only exceptions to the general finding were large primary schools where teachers as well as heads seemed positively oriented towards LMS, because, it is argued, these schools represented an exception to the rule in drawing classroom teachers into LMS decision-making through the development planning process.

Some of the research findings concerning middle managers in schools, especially heads of subject departments, raise similar issues. Both Levacic and Marren (1992b) and Bowe and Ball (1992) find that some heads of subject department feel disempowered under LMS, in part because of the concentration of key decisions at senior management level, but also because formula funding has removed an important source of independent resource power – funds from LEA subject advisers. Ball and Bowe also suggest that there is an increasing tendency to delegate difficult resource decisions within schools rather than involve middle managers corporately in their solution.

> In a number of instances it appeared as if delegating the consequences of financial constraints assumed more importance than discussing the principles on which costs might be balanced with benefits (p 76)

schools are being favoured at the expense of smaller ones. And it also seems that schools are increasingly choosing to deploy resources in new ways which imply some – albeit crude – sense of technical and price efficiency in their decision-making. As Levacic (1993) argues:

> The evidence ... shows that delegated budgeting and the development of quasi-markets has improved efficiency on the *input side* of the education production function. School managers are seeking and finding new ways of using and combining resource inputs. (pp 24-25)

What is not clear, however, is how these changes relate to educational outcomes. There is little evidence about the 'mental production functions' which underpin managers choices about the allocation of resources, nor is there any objective evidence about the impact of these choices on student learning. This leads us to a consideration of effectiveness.

Effectiveness

As the above suggests, a good deal of the research on the implementation of LMS can be explored in terms of its consequences for efficiency. Attempts to apply an effectiveness perspective, however, are fraught with difficulties both conceptual and empirical, and little of the research to date attempts to deal with the issue, at least explicitly, within an LMS context.

The most obvious way to explore effectiveness in education is to address the issue of pupil learning. The Birmingham study asked heads directly whether children's learning was benefiting from LMS: 35% said it was while 31% said that it was not. Similarly 35% agreed that LMS 'reduced staff time for the direct support of children's learning' while 40% disagreed. The authors comment as follows:

> The paradox in our survey data is a matter of concern. How is it that heads are claiming that LM allows more 'effective' use of resources whilst reporting uncertainty about its effects on learning? This raises many questions. Might it be the case, for example, that whilst head teachers welcome the 'flexibility' of LM it is at a cost – in some schools – of an additional workload upon the head which affects their familiarity with the pupils' learning? Or does the paradox arise where head teachers welcome the opportunities to make decisions without having to to obtain LEA approval, recognise this as enabling a better use of resources but are not clear as to its effects on learning? Is the paradox a short term phenomenon, as the change becomes embedded, or does it relate to long term difficulties which may be associated with schools size and levels

of resourcing. Are there explanations to be found in terms of the head teacher's role as manager? (Arnott, *et al*, 1992, p 6)

Of course, these points address only part of the problem. They beg the question of whether heads were equating effectiveness with children's learning and, even if they were, whether they shared a conception of what 'benefits' in learning means. The issue of how effectiveness is to be defined, let alone who is to define it, is therefore not addressed. This is the case for most of the studies reported here.

Bowe and Ball, however, give one interpretation of this issue:

> [Tensions] surround the definition of purpose, and these arise mainly from the constraints, requirements and opportunities created from the provisions of ERA [Education Reform Act]. For example, ... educational decision-making may be set against budget-led planning, professional judgement against the expediencies of market image and professional autonomy against managerial fiat. Thus the development of 'new management' is not simply or primarily a structural or administrative change (although new roles and relationships are created); it is also a profound change in organisational culture. (Bowe and Ball, 1992, pp 145-146)

The point here is that, through LMS and its associated developments in relation to parental choice, schools are increasingly being expected to act as if they are enterprises in a 'quasi-market'. However, 'precisely what such enterprises maximise, or could be expected to maximise, is unclear, as is their ownership structure' (Le Grand, 1990, p 5). The truth is that educational organisations must respond to a variety of competing claims on them from groups whose conceptions of effectiveness may differ considerably as does the nature of their influence on school-level decisions (Kouzes and Mico, 1979). The result of the reforms of which LMS is a part has been to establish at least three perspectives from which effectiveness can be viewed.

The first is that of national policy emanating from the Department for Education and embodied in legislation and regulations. The key elements here are the establishment of National Curriculum requirements and associated tests and examinations, and – no less important – the requirement that certain kinds of information, for example on examination and test results and on truancy should be published. At this level, therefore, it could be claimed that a very clear definition of effectiveness is being mandated by Government.

Simultaneously, however, schools are expected to become more responsive to parental choice. It is possible, of course, that parental conceptions of school effectiveness are consistent with the Government's emphasis on examination and

find LMS more difficult to manage than large ones, especially if they are budget losers. However, as LMS develops, two further issues are likely to come to the fore. These are the consequences of *changes* in school size and, related to this, the concept of 'optimum size'. As formula funding responds to changing patterns of parental choice as well as to population changes, schools will discover that 'becoming smaller' involves a rather different set of problems from those associated with 'being small'. Arnott, *et al* (1992, p 16) found that

> a substantial number of primary schools may be experiencing annual changes in pupil numbers equal to a roll change of 4%. Many secondary schools may be experiencing roll changes of 2.5%. These are changes that have a significant impact on their budgets and do not appear to be a consequence of competition. The requirement that, from April 1993, 80% of the Aggregated Schools Budget (ASB) be allocated on the basis of pupil numbers is likely to heighten this effect.

These changes, of course, may involve increases as well as decreases in roll, and in fact seem to be distributed approximately equally between them. Roll falls, however, are likely to cause the most problems, although the exact nature of these problems will be directly related to the design of the formula under which any particular school is resourced. Whether small schools are protected through a sliding scale of additional resources or through a flat rate allocation of additional resources to all schools will be a critical factor determining the possibilities available to schools in responding to falling rolls. Decisions made at the margins and from year to year will need to consider carefully the balance between efficiency and effectiveness. How far, for example, and for how long will a school be able to provide a particular curriculum package before diseconomies of scale force it to modify its objectives? Conversely, how will growing schools strike a balance between resourcing a given curriculum more intensively and broadening the range of activities available to pupils. It is common to discuss matters of size primarily in terms of efficiency, with educational objectives taken as given. Yet school size clearly has an effectiveness dimension too. Many would argue that when a school's size goes beyond a given range it is no longer the same school. For example, Bowe and Ball (1992) found that 'In fact all of our case study schools actually developed and operated with a fairly well worked out sense of "optimum" or "preferred" size' (p 46), and they go on to argue that 'the rhetoric of the market has failed to address the issues involved in the impact of growth on quality in complex "people-processing" institutions like schools' (p 49).

Whatever a school's size, a major consequence of LMS is the extension of choice about the ways in which it can deploy its resources. At present evidence is patchy about the ways in which schools choose to exercise this increased freedom. More case studies over a longer period will be necessary before any clear patterns emerge. However, a number of themes can be identified suggesting that both technical and price efficiency considerations are likely to apply.

The first relates to the overall balance between the major areas of expenditure: teaching staff, support staff, materials and premises-related expenditure. Prior to the implementation of delegated budgets, most LEAs determined the number of teaching and support staff allocated to schools on the basis of different formulae with no virement allowed between them or into or out of other areas of budget expenditure. It is difficult to generalise but two trends do seem apparent. Schools are thinking more creatively about the number and types of support staff they need (Mortimore and Mortimore, 1992), and increasing attention is being given to efficiency savings in areas of expenditure related to premises and grounds.

Second, although evidence here is less clear, schools appear increasingly to be looking afresh at how they deploy teaching staff to deliver and support the curriculum. Prior to LMS, with staffing establishments determined by LEAs, schools faced choices essentially between increasing non-contact time and reducing group sizes. Now the range of choice is wider since the overall number of teaching staff to be employed is determined at school level, subject of course to other demands on the budget and the overall level of finance available. Furthermore the implementation of the National Curriculum is redefining curriculum and hence changing the pattern of demands on teachers, while LMS itself is placing increased administrative demands on the school. In part the latter is being met in many schools by an increase in support staff, as already mentioned, but it is also leading in some schools to a reconsideration of the amount and distribution of non-teaching time provided for senior and middle managers.

Third, the role of resource pricing is likely to change, particularly with respect to teaching staff. It is Government policy that this should be so: schools are funded on the basis of average not actual salary costs, and there are increasing possibilities for schools to be flexible in their patterns of staff reward. The evidence suggests that these opportunities are only being used in a minority of cases at present, but this is likely to change over time.

The research on LMS to date, then, is most illuminating in relation to efficiency. There is some evidence that larger (and hence more efficient?)

test results and attendance. However, insofar that this is not the case, schools must attempt to ascertain parental expectations, perhaps try to influence them, and consider how their own strategies – including those of resource management – should take account of parental concerns.

Finally, those working within schools will have their own concerns and values. These may give rise to professional judgements about what is in the best interests of the particular set of students in their care which may or may not entirely match the expectations of the Government or of parents. They may also, of course be expressed in particular professional interests which they wish to advance or protect.

It is difficult to discuss school effectiveness in the context of LMS without considering these complexities. We can do little more here than pose some relevant questions:

- how far will the Government's emphasis on test and examination performance backed up by the comparative publication of results lead schools to shift their balance of priorities towards academic achievement (especially that defined by test and exam scores) above other objectives?
- how far will parental expectations or schools' perceptions of these (especially if they are not adequately encompassed by examination and test results) modify schools' objectives?
- how far, as schools expand or contract, will schools of different sizes be seen, or claim, to be qualitatively different in the kinds of experience they offer students?
- how far will schools modify their professional definitions of the needs of individual pupils and groups – such as those with special needs – and their priorities amongst them if these are felt to be inconsistent with other externally imposed demands?
- how far will schools' freedom to make choices about the allocation of resources be used to protect teachers' employment and working conditions ?
- will the various changes in power relations within the school system lead to schools becoming more diverse or more alike in terms of the objectives they pursue?

These are complex questions not easily answered. What they do imply, however, is that, with changing demands on schools arising from the various threads within the legislation, the concept of effectiveness must be considered as both dynamic and contested: dynamic because definitions – whether explicit or

implicit – will, for many schools, change over time as governors, managers and classroom teachers attempt to respond to pressures for change arising inside and outside the school; and contested because, for many schools, the various ways in which effectiveness might be defined may not prove easily reconcilable. Economic analysis, therefore cannot easily be separated from micro-political considerations.

The latter can be explored at two inter-related levels. One concerns the relationship of the school with its environment. This includes the school's response to Government demands, to parental behaviour and to the responses of other schools in the locality. Considerable research is taking place on these issues which suggests that environmental changes are indeed influencing schools in new ways but that both the changes themselves and the responses are more complex and differentiated than might perhaps be expected. There is a growing body of research on parental choice in the United Kingdom but rather less on school responses to such choice (Glatter *et al*, 1992). A research study at the Open University is exploring the interactions which occur in the 'competitive arenas' which are developing as a result of recent reforms (Glatter and Woods, 1993; Woods, 1992). The issues emerging from this and related research can only be touched on here. Two points are of particular importance. First, parental preferences seem to be differentiated, among other things, by social factors.

> [Our] analysis ... suggests that working class parents display significant differences (compared with middle class parents) in their pattern of priorities: in particular, ... they attach importance to their child's preference for the school and his or her friends being there. The factor most important to professional and middle class parents was the school's standard of academic education. ... The question is whether the differing priorities are the result of social inequalities (manifested for working class families in transport difficulties and a belief that certain schools are 'not for them') or whether they represent variations in values that stem from dissimilar (and equally valid) cultural perspectives. (Glatter and Woods, 1993).

Such findings suggest that schools seeking to respond to parental preferences may need to take quite fundamental decisions about *which* parents' preferences should receive priority (assuming, of course, that certain types of preference are incompatible in terms of their policy and resource allocation implications), and, indeed, which groups of parents they particularly wish to attract.

The second important point concerns school responses to parental choice. Here a distinction is made between changes which are 'substantive (to do with policies, practices, curriculum, organisation and the like)' and those which are

'concerned only with image and activities aimed at promoting the school' (Woods, 1992, p 207). The Open University study is finding responses of both kinds. Changes of the former kind, drawn from a variety of schools,

> include alterations to homework policy, the introduction of banding, emphasis on the caring and pastoral aspects of schooling, encouragement of staff to gain more qualifications, increased stress on extra-curricular activities and greater community access to school facilities. ... Whether such changes are in line with what parents want is another matter. Our data do not yet allow us to draw conclusions. However, it is apparent ... that in general enthusiasm for finding out what parents want is considerably less than for promoting the school to parents and the wider community. (Glatter and Woods, 1993, p 15).

The ways in which schools choose how to respond to parental and other expectations in formulating resource allocation and other policies leads us to a consideration of the second key micro-political arena – that of the school itself. Where there are inconsistencies and potential contradictions between different interpretations of school purposes and priorities attention is inevitably focussed on the processes through which decisions are made. Of particular significance here is the evidence presented earlier about the growing 'gap' between senior managers and classroom teachers under LMS. From an economic perspective this can be viewed as a form of task specialisation which may be potentially efficient.

> In the vast majority of organisations the financial function is a specialism. ... [F]inancial management is a task for senior management and ... should only impinge on teachers to the extent that it affects their immediate job. This division of labour implies an increasing differentiation between class teacher and senior manager and the need for the latter to acquire a range of competencies and understanding that extends beyond curriculum leadership. (Levacic and Marren, 1992b, p 9)

The question which then arises is:

> To what extent is class teacher involvement in financial decision-making required in order for local management to result in improvements in teaching and learning expected of it by its proponents? (1992, p 10)

For Bowe and Ball (1992), however, the implications of the evidence are rather different.

> The 'gap' between the new managers and teachers is ... not simply a division produced by role specialization. It also represents a division of values and

purposes ... establishing a balance between the marketing of the school and its income on the one hand, and making the right choices for individual students on the other. (p 159)

A similar view, albeit expressed in less strongly micro-political terms, is that of Broadbent *et al.* (1992a). For them, organisational responses to LMS may cause the 'lifeworlds' of the school to become fragmented with a small group of senior staff, working with governors, increasingly adopting the market-oriented and managerial values associated with LMS while the rest of the staff maintain traditional, student-oriented professional values. They do not think this inevitable, but where it does occur schools could become 'schizoid, ... having different lifeworlds within different groups of organisational members. This may then lead to conflict within the organisation' (Broadbent, *et al*, 1992a, p 67).

The argument here is that there is a contest within the school through which senior managers increasingly mediate the concepts of effectiveness arising from the demands of Government regulations and the 'market' while classroom teachers attempt to defend traditional, professional values deriving from the individual assessment of student needs. The implication is that these two sets of concerns are inevitably in conflict, or at least in tension. Clearly this does not necessarily follow: the degree of consistency between the values and expectations of different groups is an empirical question. The debate does, however, raise important issues about patterns of coupling within schools. What LMS does do is to emphasise 'a corporatist' conception of a school's purposes – which is inevitably reflected in the concerns of senior managers – in contrast to a more 'individualist' one which is the prime concern of classroom teachers. In the corporatist conception, effectiveness is an aggregative concept relating to the achievement of broad objectives demonstrated through such indicators as aggregated measures of examination success expressed in league tables and trends in parental choice of school. In the individualist conception, effectiveness lies in the degree to which the complex needs of each child are identified and met and his or her learning maximised. In the days before the reforms it was possible – and common – for school managers to share with teachers an individualist conception of effectiveness; as the implementation of the reforms unfolds this is becoming more difficult.

One implication of this debate might be that economics can say little about the effectiveness dimension of LMS because school purposes have been increasingly politicised by the educational reforms. This does not necessarily follow, however. Schools, and those within them, still have to manage. Certainly part of the managerial task involves reconciling as far as possible the demands of internal

and external stakeholders and make choices about the use of resources in relation to these. This has always been so. The major change arising from the legislation is that the balance of power has been redistributed among the stakeholders and the framework of constraints surrounding resource choices has been changed. In this context, it is highly relevant to ask what it is that schools seek to achieve and how far the new powers granted under LMS enable them to achieve it better. There at least three ways into this issue.

The first would be through careful longitudinal analysis of expenditure patterns in attempt to explore the concept of effectiveness through examining schools' values-in-use as opposed to their espoused values (Argyris and Schon, 1974). The kinds of questions which might be addressed by such an approach include:

- how far do schools use their increased discretion over resource use to channel resources of various kinds (including staff time) to the direct support of teaching and learning?
- where resources do support teaching and learning, what aspects of the curriculum and which groups of pupils benefit? For example, is the emphasis on maximising test/examination achievement or on targetting students with special needs?
- what resources are devoted to the management of LMS, including the management of the 'marketing' function?
- what resources are devoted to the enhancement of the school's image?
- are teaching technologies modified, through resource substitution (such as employing more support staff and fewer teachers) or through deploying existing resources differently (such as streaming or setting)? If so do such changes occur in response to professional judgement or to parental influence?
- are resources used in ways which improve or protect teachers' conditions of service (for example, through protecting permanent posts, providing free meals for teachers, or maximising supply cover)?

Information relating to questions such as these would help to illuminate discussion about the kinds of changes which are taking place in schools' implicit objective functions as they wrestle with the consequences of LMS and its related reforms. Interpreting such evidence would not be unproblematic, however. Information about patterns of resource allocation is notoriously capable of multiple interpretations: for example, decisions to protect full-time teaching posts might be interpreted in terms of the technological assumption that small group

sizes and teacher stability are the prime determinants of teaching quality or in terms of the protection of teacher interests. Such alternative interpretations cannot easily be tested, however, because so little is known about the production function in education. Furthermore, and partly because of this, choices of technology may be as subject to micro-political negotiation as choices of objectives. An excellent example of this is the case quoted by Bowe and Ball (1992, pp 50-52) of a school under pressure to change its pattern of pupil organisation in English in response to parental pressure and despite strong teacher reservations.

A second way to approach the effectiveness question is to consider whether the ways in which schools manage themselves under LMS embody specific attempts to use the flexibilities which LMS gives to focus on key outcomes especially that of improving student learning. It might be asked, for example, whether LMS increases or reduces the likelihood of schools developing the characteristics associated with 'effective schools'. British literature in this area (Rutter *et al*, 1979; Mortimore *et al*, 1988; Riddell and Brown, 1991) reaches similar conclusions about these factors as does the North American literature. The evidence available at present only addresses this issue in a fairly limited way. It might be argued, for example, that

> [i]f, as seems evident ... principals become *primarily* concerned with financial management and public relations within the education market-place, then the *educational leadership* which researchers find to be strongly associated with effective schooling, will will be minimal, if not totally compromised. (Ball, 1993, p 7)

On the other hand, there is some evidence to suggest that there is an increasing concern in schools to clarify objectives and priorities, to plan to achieve these and to monitor success. Certainly LMS has been accompanied by strong regulatory and other pressures for schools to engage in systematic 'school development planning' (Hargreaves, *et al*, 1989; Hargreaves and Hopkins, 1991). The Birmingham study found, for example, that

> Development Plans (DP) are prepared in almost all schools, although it is a very recent innovation. The adoption of a DP had led more than half of schools to review their statement of aims. ... [O]ver half of heads [reported] that DPs help in planning, prioritising and evaluating. Only 9% (63) reported that its preparation had not been helpful. (Arnott, *et al*, 1992, p 13)

Such managerial approaches may be seen as an attempt to resolve, or at least reduce, the tension between the corporatist and individualist perspectives described earlier, although the evidence suggests that the turbulence of the policy environment makes such planning particularly difficult in present circumstances (Hutchinson, 1993; Wallace, 1991a, 1991b). Furthermore, it is dangerous to generalise about concepts such as development planning which can mean very different things in different school contexts. This is undoubtedly an area where we need to know more and where a conclusion about British research would mirror that of Wohlstetter and Odden (1992) in relation to US research:

> There also is scant research on the *intervening variables* that have been shown to be related to student learning. How does SBM change the enacted curriculum? ... How does SBM help to build a collegial or professional teacher culture at the school? ... How does SBM build a powerful change process? (p 536)

The linking of school effectiveness research and research on LMS is clearly an area for possible development in the future.

Finally, the issue of effectiveness may be addressed by considering the impact of LMS on school outputs directly. The problems associated with such an approach are clear. As our earlier discussions have suggested, much of the work to date, for example in relation to formula-based resourcing and to school size, is primarily concerned with unit costs of provision and the definition of need in terms of expenditure levels. In this respect it mirrors most of the work on economies of scale in education. It does not attempt to relate costs to any measures of output such as learning achieved or examination success. Conversely, British literature on school effectiveness referred to above, gives relatively little attention to questions of resources and costs. There is, however, a large and growing body of literature on the measurement of school performance with a particularly active debate on the measurement of value added. Little of this has been related directly to LMS but here again there is clear potential for future developments.

A Fourth 'E': Equity

Before concluding, it is important to recognise that the educational reforms have major equity implications. Indeed, it could be argued that, despite the Government's strong emphasis on the objectives of increasing effectiveness, efficiency and choice in the school system, it will be equity considerations which

are likely to dominate the debate as the consequences of the reforms begin to work through. However, the issue of equity has received only limited systematic attention in the research on LMS. Like effectiveness and efficiency, it can be considered in a number of ways.

First, a distinction clearly needs to be made between procedural and distributional equity. With respect to the former, it can be argued that the distribution of resources by formula is now 'more equitable in that it is based on objective criteria (in the sense that the criteria are set out as common rules and not determined by administrative discretion)' (Levacic, 1992a, p 27). The implications for distributional equity, however, but both more complex and less clear.

Wildavsky (1979) distinguishes between 'market equity' under which services are distributed in relation to citizens' (tax) contribution, 'equal opportunity' under which services are distributed equally among users, and 'equal results' under which resources are distributed in ways which attempt to ensure that all benefit equally and that inequalities in starting points are compensated for. Certainly the design of formulae generally addresses equity questions more explicitly than it does those of efficiency and effectiveness. Since at least 80% of the budget must be allocated on the basis of the number and ages of pupils with the remainder available for use to compensate for pupils' special needs and circumstances and for the diseconomies associated with small schools, the implicit rationale for the funding of schools appears to be one of equal opportunity qualified by some gestures towards equal results. However, clearly the issue is deeper than this. The requirement that the basic age-weighted pupil unit (AWPU) should be the same for all children of the same age in any LMS scheme introduces an element of equity, but only on the assumption that age is the prime determinant of need. Since this is only partially the case, much then depends on how allocations to small schools and to meet the needs of socially disadvantaged pupils and those with special educational needs actually work out. LEAs differ considerably in the ways they treat these factors, as indeed they do in their age-weightings and in the amount spent per pupil unit. Furthermore, the ability to meet differential need adequately is limited by the requirements to allocate the bulk of the budget on the basis of AWPUs and to make the formula simple and objective (Lee, 1992).

The issue is further complicated by the impact of parental choice on pupil opportunity. Many writers argue that, where such choice exists, situations will soon arise where popular schools will be able to select their pupils rather than the other way around, and this issue is made even more sensitive by the

Government's creation of a new class of schools – grant-maintained schools (GMS) – which can, on the basis of a parental ballot, 'opt out' of LEA control and be directly funded by central government. It is not possible in this paper to review the substantial literature on the consequences of the creation of a more competitive education market in the United Kingdom. Suffice it to say that this is likely to be key issue over the next five years.

It is appropriate, however, to say something about equity questions at school level. Those responsible for managing resources at school level are now free to allocate resources as they choose. Consequently we need to supplement our earlier discussion about their objective function with a consideration of the weight they give to equity considerations within the school; and we need also to explore their assumptions about the contribution of resources to the achievements of particular groups of pupils as well as those of the school as a whole.

Here again the consequences of LMS need to be related to the wider package of educational reforms. Furthermore, it is important that the inter-relationship between effectiveness, efficiency and equity considerations is clearly understood. Increasing competition accompanied by the publication of particular performance indicators, notably examination results and attendance rates, is likely to affect not only schools' definitions of their purposes and their allocation of resources in pursuit of these purposes, but also their perception of students as 'raw materials' rather than 'clients'. It can be hypothesised that an incentive system which emphasises test and examination success will encourage schools, first, to become more selective in their admissions policies and, secondly, to exclude students whose exhibit behavioural or other problems which affect the school's image or place particularly heavy demands on resources, especially teachers' time (Ball, 1993). This is clearly an important area for research. At present systematic evidence is limited, although there are some indications that both of these hypotheses are being validated in some cases (Stirling, 1992).

A second issue relating to equity at school level concerns the distributive component of schools' objective functions and the ways in resources are distributed among groups of pupils with differing educational needs. Relevant here is Brown and Saks (1975) distinction between 'levellers' who prefer smaller dispersions of student performance and 'elitists' who are willing to accept wider dispersions for the sake of higher mean levels of performance. Here, the considerations which may influence admission and exclusion policies can also be explored in terms of internal resource allocation. Very little has been written about this so far; it is an area where much more research is needed.

Conclusion

This review of selected parts of the research literature on LMS suggests a number of findings which, given their tentative nature, might best be considered as hypotheses in need of further research. At a macro-level formula funding is tending to favour larger schools at the expense of smaller ones and is making the assumptions upon which schools are funded more transparent. It is leading to a slowly developing debate about the relationship between resources and needs. At the level of the individual school, LMS seems to be encouraging resource decision-making which is consciously efficiency-enhancing. However, the conception of efficiency used here is strongly input-oriented and it is not clear how choices made by schools about their patterns of resource acquisition and deployment relate to intended or actual learning outcomes or to other conceptions of effectiveness. Indeed, there is little evidence concerning the impact of LMS on school effectiveness, beyond examples of schools responding to parental choice through both 'image-enhancing' and 'substantive' changes in curriculum and organisation. Furthermore, it is too early to draw firm conclusions about the consequences for efficiency and effectiveness of *changes* in school size which will occur as a result of increased parental choice as well as from demographic changes.

The nature of school responses to LMS seems to depend both on their circumstances (especially whether they are 'winners' or 'losers' under LMS formulae) and on the managerial approaches of their leaders. These leaders are finding themselves increasingly functionally separated from their staffs as they address issues of 'corporate' effectiveness in relation to the demands of external stakeholders while classroom teachers continue to concern themselves with the more individual needs of students within a context increasingly defined by the demands of the National Curriculum and testing. This separation is reflected in differences in orientation to LMS itself – headteachers overwhelmingly in favour, classroom teachers less so – whatever the resourcing experience of the schools in which they work.

More generally the paper suggests that, while the concepts of efficiency and effectiveness provide a useful and important framework for examining the consequences of LMS, and much of the research can be related to these ideas and leads to interesting, if tentative, conclusions, much would be gained by a more rigorous and consistent use of the concepts. In particular, fundamental consideration needs to be given to how efficiency and effectiveness are to be interpreted and measured in a situation where schools' objective functions are

both dynamic and contested, and greater consideration needs to be given to the inter-relationship between efficiency and effectiveness and considerations of equity.

Acknowledgements

I am grateful to Rosalind Levacic and Hywel Thomas for comments on an earlier draft of this paper.

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